

Having described the invention, the following is claimed:

1. A compliant pin adapted to be pressed into a through-hole of a printed circuit board and have electrical contact with opposing surfaces of a side wall of the through-hole, said compliant pin comprising:

a portion insertable in the through-hole, said portion comprising spaced deflectable beam portions having outer surfaces spaced apart a distance greater than the spacing of the opposing surfaces of the side wall, said beam portions engaging the side wall and deflecting toward each other when said portion is inserted in the through-hole and providing a frictional engagement between said beam portions and the side wall, the frictional engagement providing a retention force for retaining said portion in the through-hole;

said portion comprising an opening extending through said portion and defining inner surfaces of said beam portions opposite said outer surfaces, said inner surfaces consisting essentially of a plurality of blended cylindrical surfaces.

2. The compliant pin recited in claim 1, wherein said frictional engagement provides a retention force of

at least four pounds for retaining said portion in the through-hole, said portion having a thickness of no greater than 0.4 millimeters.

3. The compliant pin recited in claim 2, wherein the thickness of said portion is measured perpendicular to both a longitudinal axis of said portion and a lateral axis of said portion.

4. The compliant pin recited in claim 2, wherein said portion has a length of about 3.22 millimeters and a width of about 1.24 millimeters measured between said outer surfaces of said beam portions, the through-hole having a diameter of about 1.0 millimeter.

5. The compliant pin recited in claim 1, wherein said inner surfaces of said beam portions each include a central cylindrical surface, said central cylindrical surfaces being convex and presented facing each other, said central cylindrical surfaces defining a central portion of said opening.

6. The compliant pin recited in claim 5, wherein said central cylindrical surfaces help define central

interface portions of each of said beam portions, each of said interface portions including an interface surface formed on said outer surfaces of said beam portions opposite the central cylindrical surface of each respective beam portion, said interface surfaces having convex cylindrical configurations and being presented facing away from each other.

7. The compliant pin recited in claim 6, wherein said interface surfaces provide said frictional engagement with the side wall of the through-hole.

8. The compliant pin recited in claim 5, wherein said central cylindrical surfaces help define central interface portions of each of said beam portions, each of said interface portions including an interface surface formed on said outer surfaces of said beam portions opposite the central cylindrical surface of each respective beam portion, said interface portion of each of said beam portions having a cross-sectional area that is greater than a cross-sectional area of a remainder of said beam portions.

9. The compliant pin recited in claim 1, wherein said compliant pin has a longitudinal axis and a lateral axis extending perpendicular to the longitudinal axis, said cylindrical surfaces having axes that extend perpendicular to both the longitudinal axis and the lateral axis of said contact.

10. The compliant pin recited in claim 1, further comprising a positioning portion comprising first and second leg portions positioned on laterally opposite sides of said portion, each of said legs having a surface for engaging a surface of the printed circuit board adjacent the through-hole and limiting insertion of said portion in the through-hole to help place said portion at a predetermined axial position in the through-hole.

11. A compliant pin adapted to be pressed into a through-hole of a printed circuit board and have electrical contact with opposing surfaces of a side wall of the through-hole, said compliant pin comprising:

 a portion insertable in the through-hole, said portion engaging the opposing surfaces of the side wall and providing a frictional engagement between said portion and the side wall, the frictional engagement providing a

retention force of at least four pounds for retaining said portion in the through-hole, said portion having a thickness no greater than 0.4 millimeters.

12. The compliant pin recited in claim 11, wherein the thickness of said portion is measured perpendicular to both a longitudinal axis of said portion and a lateral axis of said portion.

13. The compliant pin recited in claim 11, wherein said portion has a length of about 3.22 millimeters and a width of about 1.24 millimeters, the through-hole having a diameter of about 1.0 millimeter.

14. The compliant pin recited in claim 11, wherein said portion for engaging the opposing surfaces of the side wall comprises spaced deflectable beam portions having outer surfaces spaced apart a distance greater than the spacing of the opposing surfaces of the side wall, said beam portions engaging the side wall and deflecting toward each other when said portion is inserted in the through-hole and providing the frictional engagement between said portion and the side wall, said portion comprising an opening extending through said portion and

defining inner surfaces of said beam portions opposite said outer surfaces, said inner surfaces consisting essentially of a plurality of blended cylindrical surfaces.

15. The compliant pin recited in claim 14, wherein said inner surfaces of said beam portions each include a central cylindrical surface, said central cylindrical surfaces being convex and presented facing each other, said central cylindrical surfaces defining a central portion of said opening.

16. The compliant pin recited in claim 15, wherein said central cylindrical surfaces help define central interface portions of each of said beam portions, each of said interface portions including an interface surface formed on said outer surfaces of said beam portions opposite the central cylindrical surface of each respective beam portion, said interface surfaces having convex cylindrical configurations and being presented facing away from each other.

17. The compliant pin recited in claim 16, wherein said interface surfaces provide said frictional engagement with the side wall of the through-hole.

18. The compliant pin recited in claim 15, wherein said central cylindrical surfaces help define central interface portions of each of said beam portions, each of said interface portions including an interface surface formed on said outer surfaces of said beam portions opposite the central cylindrical surface of each respective beam portion, said interface portion of each of said beam portions having a cross-sectional area that is greater than a cross-sectional area of a remainder of said beam portions.

19. The compliant pin recited in claim 11, wherein said compliant pin has a longitudinal axis and a lateral axis extending perpendicular to the longitudinal axis, said cylindrical surfaces having axes that extend perpendicular to both the longitudinal axis and the lateral axis of said contact.

20. The compliant pin recited in claim 11, further comprising a positioning portion comprising first and

second leg portions positioned on laterally opposite sides of said portion, each of said legs having a surface for engaging a surface of the printed circuit board adjacent the through-hole and limiting insertion of said portion in the through-hole to help place said portion at a predetermined axial position in the through-hole.

21. An electrical contact adapted to be pressed into a through-hole of a printed circuit board and have electrical contact with a surface defining the through-hole, said contact comprising:

 a portion for engaging the surface of the printed circuit board defining the through-hole and providing a frictional engagement with the surface;

 the frictional engagement providing a retention force for retaining said portion in the through-hole;

 said portion having opposite surfaces and an opening extending through said portion and intersecting said opposite surfaces;

 said opening being defined by opposite beam portions of said portion that deflect when the contact is pressed into the through-hole, said beam portions having surfaces defining said opening;

said surfaces consisting essentially of a series
 of cylindrical surfaces on each of said beam portions and
 defining said opening.